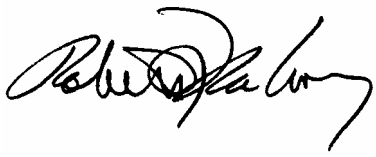
# California Public Employees' Retirement System

## Parallel Valuation and Certification of the Actuarial Valuation of the Volunteer Firefighters' Length of Service Award System For the Plan Year Ending June 30, 2004

**Report Completed In Satisfaction of Task 3 of Contract 2003-3236**


**Approved:**



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## Overview

EFI Actuaries has completed a parallel valuation and certification of the Actuarial Valuation of the Volunteer Firefighters' Length of Service Award System (VFLSAS) as of June 30, 2004. As a result, we are able to certify that the liabilities computed in this Valuation are reasonably correct and were computed in accordance with generally accepted actuarial principles.

However, we do have some concerns about the accounting treatment of the VFLSAS. Recent Statements promulgated by the Governmental Accounting Standards Board (GASB) suggest that in the future VFLSAS liabilities and costs may have to be accounted for differently than at present.

This issue, our supporting calculations, and some additional comments are presented in more detail below.

## Background

The VFLSAS pays a monthly stipend of up to $100 to volunteer firefighters who have been in the System for 20 or more years. The System was started in 1981 with a $200,000 simple interest loan from the State's General Fund. The loan has been repaid.

Annual valuations of the VFLSAS are completed using the unit credit method. Each year (under the unit credit method) one year's service cost (the normal cost) is computed and added to the currently determined value of all prior accumulated credits. Volunteer departments pay for these credits on behalf of their volunteer firefighters. The cost computation process is based on certain assumptions regarding the rate of investment return on System assets, forfeitures, retirement age, longevity of members, and expenses.

A firefighter, who has reached 60 and is credited with 10 or more years of service under the System, whether or not consecutive, will be awarded a lifetime award of $5 per month for each year of service up to 20 years. Service is credited to members from the time a volunteer fire department elects to be covered. The department also may choose to purchase up to eight years of prior service credit over a financing period of up to 10 years. In 2001, a $3,000 death benefit was added for all members (whether active or inactive) who have at least 10 years of service.

Participants do not make contributions to the System. It is financed entirely by contributions from participating departments and the investment return on System assets. Department contributions equal the unit credit normal cost for members plus supplemental payments for any purchased prior service credit.

The valuation date is the last day of the plan year. The normal cost is the present value of awards accrued during the plan year. (The present value is today's cost of tomorrow's benefits -- that is, how much must be put aside today to pay for the pension beginning at age 60.) The accrued liability is calculated as the present value of all accrued awards, including the accrual earned in the current plan year.

Actuarial assumptions used to compute System liabilities and normal costs include:

- A 7.50% annual rate of investment return, net of all expenses;

- The 1994 Group Annuity Mortality Table for males and females for mortality;

- Rates of withdrawal which vary by years of service. The assumed rate of withdrawal for the first 5 years of service is 15%; the rate for years 6 through 9 is 5%. Inactive members are assumed to remain inactive for all future years; and

- Retirement at age 60 and completion of 10 years of credited service.

If assets on hand are sufficient, a supplemental award of half of the VFLSAS award may be paid to retired participants. Because the supplemental awards are contingent on continuing maintenance of adequate actuarial reserves, each disbursement is accompanied by a statement reflecting the discretionary nature of the stipend and cautioning the recipient that its continuation is dependent on the continued finding of financial soundness for the System.

Accordingly, because the stipend may be discontinued without legal redress, the actuary is able to exclude the liability associated with a continuation of the supplemental benefit amount (beyond two years) from liability determinations for both current and future System participants. No supplemental awards were payable as of June 30, 2004.

## Methodology

Parallel valuation and certification involves two steps:

- Independent Parallel Valuation

  In order to verify the accuracy of calculations in the VFLSAS Valuation, EFI conducted an independent, parallel valuation using its own actuarial model. This valuation determines whether actuarial assumptions and methods are applied properly and yield the reported results.

- Review of Methods and Assumptions

  The actuarial assumptions and methods employed in the VFLSAS Valuation were reviewed by EFI in order to establish that they meet acceptable standards of actuarial practice.

In the course of our review we noted a number of points not directly related to parallel valuation or certification issues; these are discussed below.

## Parallel Valuation

The VFLSAS Valuation was performed using an Excel spreadsheet to compute liabilities and normal costs. EFI validated the calculations by creating an *independent* Excel spreadsheet to develop the valuation results. The only data common to the two spreadsheets was the participant data; the EFI spreadsheet was developed separately, without reference to the one used for the Valuation.

Table 1 below shows the results of the calculations. We note the results produced by the Valuation and by EFI are in very close agreement. Liabilities and costs are all within 5% for all benefits, and within 2.5% in total.

When the funded ratio for a plan is close to 100%, the Unfunded Accrued Liability (UAL) becomes very sensitive to small differences in Accrued Liability (AL), as evidenced in the table. Given the Plan's current funded status, a difference of about 1% of the AL causes the UAL to be off by over 6%, thus a small discrepancy becomes amplified. The difference in UAL calculated by EFI versus that determined by CalPERS is thus not a material difference.

**Table 1: Parallel Valuation Results**

| | VFLSAS Valuation | EFI Parallel Valuation | Difference |
|---|---|---|---|
| Award Normal Cost | $ 122,088 | $ 128,163 | 4.98% |
| Death Benefit Normal Cost | 9,175 | 9,302 | 1.38% |
| Load for Administrative Costs | 129,098 | 129,098 | 0.00% |
| Total Normal Cost | 260,361 | 266,563 | 2.38% |
| Retiree Regular Liability | 660,797 | 661,119 | 0.05% |
| Retiree Supplemental Liability | 0 | 0 | N/A |
| Retiree Death Benefit Liability | 104,237 | 104,148 | (0.09)% |
| Active Prior Service Liability | 781,676 | 780,504 | (0.15)% |
| Active Current Service Liability | 1,695,721 | 1,660,808 | (2.06)% |
| Active Death Benefit Liability | 282,834 | 282,944 | 0.04% |
| Total Accrued Liability | $ 3,525,265 | $ 3,489,523 | (1.01)% |
| Assets | 2,974,642 | 2,974,642 | 0.00% |
| Unfunded Accrued Liability | $ 550,623 | $ 514,881 | (6.49)% |

## Review of Methods and Assumptions

We have reviewed the actuarial methods and assumptions used for the June 30, 2004 VFLSAS valuation, and found them to be within acceptable standards of actuarial practice.

### *Asset Smoothing*

The method used to smooth assets for computing costs and funding ratios in the VFLSAS valuation is being changed. Investment gains and losses are now being spread using a 15-year factor, replacing the three-year factor currently in use. In addition, the difference between actuarial assets and market value of assets is now allowed to vary by 20%, a widening of the 10% corridor currently in place. These changes have been put in place by the CalPERS Board to attempt to stabilize employer contribution rates.

The 15-year period being implemented for asset valuation has both merits and drawbacks. One important point is that the more years of smoothing taken into account, the more likely it is that the actuarial value of assets will remain at one end of the 80%/120% asset corridor for extended periods of time. Of course, once the actuarial value is constrained by reaching either 80% or 120% of market value, it will tend to

move in parallel with market value, and there may be no asset smoothing at all.

Through simulation modeling, we have verified this observation, showing that over a 100 year period, using a 15-year smoothing period the actuarial value reaches the corridor value (the farthest possible value from the actual market value) about eight times more often as compared to using a three year smoothing period with the same corridor. Using the same model, a 15-year smoothing period with an 80%/120% corridor reaches the corridor value about 30% more often as when using a 3-year smoothing period with 90%/110% corridor.

We have discussed this issue and the above findings with the Actuarial Office. They are aware of the issue, and consider the potential asset fluctuations at the boundaries of the corridor to be a worthwhile tradeoff for the additional smoothing of employer costs resulting from the use of the 15-year factor. We do not disagree with their point of view.

***Accounting Standards***

In the past, the VFLSAS has not been accounted for as a pension plan under GASB Statements 25 and 27. The VFLSAS members are volunteers, not employees of the participating departments, and the VFLSAS benefits are not considered by the State to be pensions.

The GASB recently released Statements 43 and 45 to define generally accepted accounting principles as they apply to "Other Post-Employment Benefits." Such benefits are non-pension benefits, mainly retiree health insurance. In issuing these Statements, GASB has now extended generally accepted accounting practices to all post-employment benefits – pension in Statements 25/27 and all other benefits in Statements 43/45.

It remains true that volunteer firefighters are not employees. Therefore, it could be argued that technically none of the GASB Statements apply. However, the participating fire departments do make contributions on behalf of VFLSAS members, and they have incurred liabilities on behalf of active and retired volunteers. Therefore, extension of accounting rules to the VFLSAS would not be completely unexpected.

Extension of GASB accounting rules to the VFLSAS would have at least two consequences. First, an annual required contribution would be computed and included in the financial statements of the participating departments.

Second, the supplementary benefit offered by the VFLSAS may generate a liability for accounting, if not for funding purposes.

Within the VFLSAS, a supplemental benefit is payable when the valuation funding ratio is at least 100% including the supplemental benefit. The supplemental benefit was not payable as of June 30, 2004. We agree with this determination; however we believe that a liability associated with the benefit could be accounted for nonetheless.

GASB 27 states that all benefits "in force at the time of the valuation" should be included, though the phrase "in force" is not defined. Similarly, GASB 45 states that the projection of benefits "should include all benefits to be provided to plan members or beneficiaries in accordance with the current substantive plan (the plan as understood by the employer and plan members) at the time of each valuation". It seems

that this contingent supplemental benefit has some value, even if it is not offered currently. Therefore, it is possible that an accounting liability could be required.

Even though GASB Statements do not presently appear to apply to the VFLSAS, we recommend that developments in this area be monitored.

## Other Observations

### *Receivables*

In our prior reports certifying the June 30, 1997 and June 30, 2002 actuarial valuations, EFI observed that a significant portion (over 6% in each case) of System assets were comprised of non-interest bearing contribution receivables. As of June 30, 2004, this is also the case with net receivables accounting for about 15% of net VFLSAS assets.

If more than 10% of net System assets were held permanently in the form of non-interest bearing receivables, one would expect a lower rate of return reflecting the lack of investment earnings on these assets. If receivable contributions are not expected to decline as a percentage of the total assets to a de minimus amount as the fund grows, then EFI recommends that the lack of investment earnings on these assets be mentioned and accounted for in the interest rate assumptions.

### *Breaks in Service*

An assumption that has been used for the VFLSAS valuations is that inactive participants will remain active for all future years. This is somewhat in discord with the statement in Exhibit 7 which states that "…many members have frequent breaks in their service." Thus, some new entrants to the Plan are actually rehires, and will already have prior service, thereby increasing accrued liabilities and costs much more than a true new entrant. We suggest that this be accounted for by assuming a certain percentage of inactive participants are rehired each year.

There are currently over 2,000 of these participants. Assuming for example, that 10% of them are rehired in the future would cause an increase in Accrued Liability of about $150,000 (about 4% of the total) as of June 30, 2004. This would also serve to minimize future actuarial losses as inactive participants become active again.

### *Unit Credit Funding*

While the unit credit funding method seems appropriate for dollar per month benefit accruals, an alternative should be considered if the average age of participants continues to climb steadily each year. The entry age normal funding method could avoid regular unit credit normal cost increases. EFI suggests reviewing this issue at the end of each actuarial valuation period to determine whether the group's characteristics warrant a change in funding method.

Over the period between the June 30, 1997 actuarial valuation and the June 30, 2004 actuarial valuation, the average age of non-retired participants increased from 35.6 years to 40.3 years seven years later. This increase does seem to indicate a sustained upward trend, causing unit credit costs to increase progressively.